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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,626	12/18/2001	Stephen Frank Blazo		6403

7590 12/13/2004
STEPHEN BLAZO
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EXAMINER

WANG, QUAN ZHEN

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 12/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/017,626	BLAZO, STEPHEN FRANK	
	Examiner	Art Unit	
	Quan-Zhen Wang	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Drawings***

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

1. The disclosure is objected to because of the following informalities: The current application first recites "... the unknown signal 24 and the calibration signal 26" (page 5, lines 3-4), it then recites "The calibration signal 24 ... (page 5, line 10) ... The signal spectrum 26 (page 5, line 12)", these two recitations are contradictory to each other. Appropriate correction is required.
2. Claim 2 is objected to because of the following informalities: claim 2 recites "... where the gas cell **instead** of being placed at the input of the wavelength multiplexer is **instead** placed at the out of the demultiplexer", the "instead" is redundant. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the unknown signal" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 recites "... where the gas cell **instead** of being placed at the input of the wavelength multiplexer is **instead** placed at the out of the demultiplexer". This recitation is contradictory to the independent claim 1, which recites "... the gas cell is placed at the input of the wavelength multiplexer".

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lu et al. (U.S. Patent US 6,633,371 B1) in view of Althouse et al. (U.S. Patent Application Publication US 2003/0035163 A1).

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Regarding claim 1, as being understood in view of the above 112 problem, Lu teaches an apparatus for calibrating a tunable filter simultaneously with the measurement (fig. 1) wherein the tunable filter exhibits a repeating wavelength transmission at various orders (column 4, lines 4-10), the apparatus comprises a wavelength multiplexer (fig. 1, 110) receiving an unknown signals (fig. 1, 102) and a calibration signal generated by broadband emitter (fig. 1, 106) and a gas cell (fig. 1, 122) in series; the emitter and gas cell emitting and absorbing, respectively, at wavelengths outside the measurement range of interest (column 4, lines 37-40) and at another order of the filter (column 4, 15-34); the tunable filter receiving the combined unknown signal and the calibration signal; the tunable filter being controlled to output a wavelength from the unknown signal λ_x and another wavelength from the calibration signal λ_{rx} , a wavelength demultiplexer (fig. 1, 120) separating the wavelength λ_{rx} from the wavelength λ_x ; a gas cell (fig. 1, 122) of a known frequency response being placed at the output of the demultiplexer (fig. 1, 120) receiving the wavelength λ_{rx} and producing a filtered signal to be electronically measured so that the wavelength λ_x can be derived. Lu differs from the claimed invention in that Lu does not specifically teach to place the gas cell between the reference source and the input of the wavelength multiplexer (fig. 3, 110). However, Althouse, in a similar tunable filter calibration apparatus, teaches to put the gas cell (fig. 3, 322) between the reference source (fig. 3, 320) and the optical coupler (wavelength multiplexer) (fig. 3, 312) which directing the calibration signal to pass through the tunable filter simultaneously with the unknown signal (fig. 3, L) from the opposite directions.

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The reason for Althouse to propagate the calibration signal in the opposite direction of the unknown signal is that the calibration signal and the unknown signal are both in the same wavelength range and can be separated only when they propagate through the tunable filter at opposite direction. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to place the gas cell between the reference source and the input of the wavelength multiplexer, as it is taught by Althouse, in the apparatus for calibrating a tunable filter taught by Lu in order to keep the gas cell close to the calibration reference source. This alternation does not change the technical merit of the calibration apparatus, but just increases the design flexibility.

Regarding claim 2, as being understood in view of the above 112 problem, Lu teaches an apparatus for calibrating a tunable filter simultaneously with the measurement (fig. 1) wherein the tunable filter exhibits a repeating wavelength transmission at various orders (column 4, lines 4-10), the apparatus comprises a wavelength multiplexer (fig. 1, 110) receiving an unknown signals (fig. 1, 102) and a calibration signal generated by broadband emitter (fig. 1, 106) and a gas cell (fig. 1, 122) in series; the emitter and gas cell emitting and absorbing, respectively, at wavelengths outside the measurement range of interest (column 4, lines 37-40) and at another order of the filter (column 4, 15-34); the tunable filter receiving the combined unknown signal and the calibration signal; the tunable filter being controlled to output a wavelength from the unknown signal λ_x and another wavelength from the calibration signal λ_{rx} ; a wavelength demultiplexer (fig. 1, 120) separating the wavelength λ_{rx} from the wavelength λ_x ;

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a gas cell (fig. 1, 122) of a known frequency response being placed at the output of the demultiplexer (fig. 1, 120) receiving the wavelength λ_{rx} and producing a filtered signal to be electronically measured so that the wavelength λ_x can be derived.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Johnson et al. (U.S. Patent US 6,619,864 B2) teach an optical channel monitor with continuous gas cell calibration wherein the gas cell is placed near the detector, instead of near the calibration light source (fig. 4).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571) 272-3114. The examiner can normally be reached on 8:30 AM - 5:00 PM, Monday - Friday.

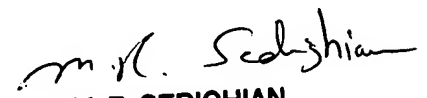
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through

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Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

qzw


M. R. SEDIGHIAN
PRIMARY EXAMINER